

which is recently on the market. Examples of such an LCD include TFT type LCDs, such as UXGA (10.4 inches; 1200 x 1600 pixels) and XGA (6.3 and 4 inches; 1024 x 768 pixels).

In the LCD 3 used in the present invention, it is desirable for the sum total t of the thicknesses of the substrate 32 and the polarizing film 31 at least on the photosensitive film 4 side to be as small as possible. It is set at not more than 1.0 mm, more preferably not more than 0.8 mm, and most preferably not more than 0.6 mm. Still more preferably, it is desirable for the sum total of the thicknesses of the substrate 36 and the polarizing film 37 on the back light unit 1 (the porous plate 2) side to be also small. It is set preferably at not more than 1.0 mm, more preferably not more than 0.8 mm, and most preferably not more than 0.6 mm.

While there are no particular limitations regarding lower limit values, it is possible, for example, to limit the thickness of the glass substrate 32 as not less than 0.5 mm since the thickness of the glass substrate 32 can only be reduced to approximately 0.5 mm. The sum total thickness values as mentioned above should not be construed restrictively. To realize the above condition, it is also effective to use resin substrates instead of the glass substrates. In that case, the lower limit value of

approximately 0.5 mm can be further reduced.

The reason for limiting the sum total t of the thicknesses of the substrate 32 and the polarizing film 31 on the photosensitive film 4 side to not more than 1.0 mm in the present invention will be explained below.

By thus limiting the sum total of the thicknesses of these components, diffusion of light in the section between the back light unit 1 and the LCD 3 is restrained, and, if, strictly speaking, the display surface of the LCD 3 and the photosensitive surface of the photosensitive film 4 are held in a non-contact state, it is possible to obtain a clearer transfer image.

That is, in the transfer apparatus of the present invention, the display surface of the LCD 3 and the photosensitive surface of the photosensitive film 4 spaced apart from each other by a predetermined distance to hold them in a non-contact state. This is certainly a condition necessary for obtaining a transfer apparatus which has a simple structure and which is of higher practical value and easy to handle. On the other hand, this is rather undesirable from the viewpoint of obtaining a clear transfer image since it aggravates the light diffusion between the display surface of the LCD 3 and the photosensitive surface of the photosensitive film 4. In

view of this, in the present invention, the disadvantage due to the non-contact state (the increase in light diffusion) is compensated for by the advantage due to the above-mentioned sum total thicknesses (the suppression of light).

As stated above, the conventional transfer apparatus disclosed in JP 11-242298 A, shown in Fig. 7, uses an LCD having a thickness of approximately 2.8 mm. As shown in Fig. 7, the LCD comprises the two polarizing plates 301 and 305, the two substrates 302 and 304, and the liquid crystal layer 303 held between them. Although not stated in the above-mentioned publication, generally speaking, the thickness of liquid crystal itself is approximately 0.005 mm (See "Color TFT Liquid Crystal Display", p 207, published by Kyoritsu Shuppan). Thus, it is to be assumed that the sum total of the thicknesses of the substrate 301 (305) and the polarizing plate 302 (304) is approximately 1.3 mm to 1.4 mm.

Light diffusion degree is in proportion to distance. Thus, when the above-mentioned thickness of 1.3 mm to 1.4 mm is reduced by half, the diffusion degree is also reduced by half, and it is to be assumed that the value "enlarged by approximately 0.09 mm on one side", referred to with reference to the prior art, is also reduced to 1/2, that is,